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Homemakers' participation in an extension program

Gerald Edward Parsons
Iowa State College

HOMEMAKERS' PARTICIPATION IN AN EXTENSION PROGRAM

by

Gerald Edward Parsons

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INTRODUCTION

Essential for the operation of a democratic society is the voluntary participation of its citizens in the activities and organizations of the society. Participation serves as the vehicle by which the society continues to meet its objectives. In an attempt to understand and predict participation, social science research workers have devoted considerable attention to the study of participation in voluntary organizations. Most studies have dealt with the analysis of factors relating to participation and non-participation or with factors relating to the differential participation of members. Recently research workers have studied participation in the less formally organized activities such as political meetings, voting, and social activities.

This thesis is more nearly related to the latter frame of reference in that it analyzed participation in the less formalized activities of a public agency. Hypotheses tested should increase the knowledge about factors related to participation in less formalized educational activities. Specifically, it is a study of the relationship of personal, social, and economic factors to participation of a group of homemakers in the Iowa Cooperative Extension Service.

Since the present study involved a system that is uniquely different from most of the other groups studied, it was

felt that it was important to briefly review the origin of the extension service, the basic legislation, and extension philosophy.

Iowa Cooperative Extension Service

The Iowa Cooperative Extension Service in Agriculture and Home Economics* came into being in 1906 when the 31st General Assembly passed the First Extension Act. This Extension Act[1] outlined the extension service as follows:

> The Iowa State College of Agriculture and Mechanics Arts is hereby authorized to undertake and maintain a system of agricultural extension work. Under this system the said college shall be authorized to conduct experiments in the various portions of the state, and in giving instructions wherever, in the judgment of the college authorities, it shall be advisable, in reference to the various lines of agriculture work maintained upon the college grounds at Ames, Iowa. The college authorities are authorized to give instruction in corn and stock raising, dairying, land drainage, and kindred subjects including domestic science. This work shall be so planned so, in the judgment of the college authorities, it is best calculated to carry to the communities remote from the college the benefits of the skilled instruction given by the teachers of said school and the results in the work of the experiment station.

The Smith-Lever Act, passed by Congress in 1914, introduced a new era to the extension service program. The new

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*Hereafter referred to as the "extension service" or "extension".

[1]Barton Morgan. A history of the extension service of Iowa State College. Ames, Iowa. Collegiate Press, Inc. 1934. p. 94.

law provided that agricultural extension work should be carried on in cooperation with the United States Department of Agriculture and the Land Grant Colleges. Specifically, the Smith-Lever Act[1] in part states:

> . . . that cooperative agricultural extension work shall consist of giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in said colleges in the several communities, and imparting of such information on said subjects through field demonstration, publications, and otherwise; and this work shall be carried on in such a manner as may be agreed upon by the Secretary of Agriculture and the state agricultural college or colleges receiving benefits of this act.

This act, aided by subsequent legislative acts, provided the framework for development of one of the largest and most active agencies for adult education. The extension service, which now assists more than 10 million of the nation's families a year,[2] was designed primarily to aid farmers and rural homemakers, but subsequently was extended to rural nonfarm and urban families; commodity and other related organizations; and individuals, firms, and organizations which serve farmers.

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[1]U. S. Department of Agriculture. Federal legislation, regulations and rulings affecting cooperative extension work in agriculture and home economics. U. S. Dept. Agr. Misc. Pub. 285. 1946. p. 7.

[2]U. S. Department of Agriculture. 1957 Extension Committee on Organization and Policy. Subcommittee on Scope and Responsibility. Statement of scope and responsibility. Washington, D. C. Author. 1958. p. 4.

The Extension Committee on Organization and Policy has stated in regard to scope and responsibility:[1]

> We believe no one can legitimately question that extension's first responsibility is to farm families. However, others cannot be ignored. In different degrees, and for somewhat different types of problems, they are interested in the results of research from our public research laboratories. At the same time, knowledge of this research and the application of findings by all groups, in addition to farm families, can be and should be of direct benefit.

Home Economics Extension Work

Domestic science or home economics was included in the original extension legislation. The objectives of the home economics extension program have been stated as follows:[2]

> In view of technological developments, the changing educational, social and economic situation and the need for continuous education in all cycles of the family and for all ages, home economics extension is placing increased emphasis on:
> 1) the management of human and material resources to attain the values the family considers important;
> 2) the unit approach to the problem of the home and farm;
> 3) the optimum development of children, youth and adults as individuals and as members of a family and community;
> 4) obtaining and making wise use of health facilities and services;
> 5) the economics of consumption with consideration for the inherent values in homemaking;

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[1] Ibid., p. 13.

[2] Louise Rosenfeld, Ames, Iowa. Statement concerning home economics in land-grant institutions. Personal communication. 1958.

6) an understanding of public affairs affecting the family's welfare;
7) the interdependency of rural and urban life; and
8) community development and the further development of an informed leadership within the framework of a democracy.

Over the years the home economics extension program developed a pattern of working through organized homemakers' groups in addition to individual contacts with homemakers and special interest groups, such as parent-teacher organizations, garden clubs, and church groups. Home economists also present educational material at meetings of formally organized groups.

A system of training local leaders to prepare and present subject matter lessons to their own clubs or organizations has characterized the development of the home economics extension program. In Iowa 47.5 per cent of the women reached in the home economics extension program were reached through the 2,748 organized groups[1] whereas nationally, the home economics extension program reached 20 per cent of the women through organized homemakers' groups.[2]

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[1]Iowa State College. Cooperative Extension Service. Annual report of home economics supervision for the year ending Sept. 30, 1957:45. 1958. (Typewritten)

[2]U. S. Department of Agriculture. Extension activities and accomplishments 1957. U. S. Dept. Agr. Ext. Serv. Circ. 517. 1958. pp. 1-2.

Purposes of the Present Study

Staff members are continually seeking new knowledge and skills that will further develop their ability to plan and execute better extension programs. Information about those who are participating in the extension program is important to program planning and execution. A new dimension is added to the program planning process when factors related to participation, such as understanding of the extension service, age, and formal group participation, are known and utilized. Knowledge of these relationships help form the basis for making more intelligent decisions about the program.

The federal extension study of home demonstration club members, of which the present study was a partial analysis of the Iowa data, throws light on some of the basic characteristics and understandings of the homemakers who are a part of the formal organized groups participating in extension activities. The federal study, when completed, should give the extension service some significant facts with which to further develop the home economics program. The present study in turn should help provide some insights for the Iowa home economics extension program.

Previous studies[1] have indicated differences not only in

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[1]E. J. Neiderfrank. New Hampshire extension service looks at itself. University of New Hampshire Agr. Ext. Serv. Circ. 294. 1949. pp. 24-26.

the characteristics of those who participated in the extension program but also that there is a large variation in the level of participation of those who did take part in the program. The present study was designed to analyze the relationship of selected characteristics of Iowa homemakers who participated in extension through formal organized groups to level of participation in extension.

The major purpose of this thesis is to determine the relationship of selected personal, social, and economic factors of women participating in the extension program through formally organized groups, to the level of participation in an extension service program. In addition, a discussion of the implications of the findings for the home economics extension program will be presented.

The general proposition was that there would be significant differences in the levels of participation and they would be related to selected personal, social, and economic characteristics. Specific hypotheses will be presented in the Analysis of Data section.

METHODOLOGY

Review of Literature

To permit a more logical development of the present research study, the review of literature has been integrated in the appropriate sections of this thesis. For example, the background information on the development of the extension service has been included in the introductory section. Previous research findings will be reported in the Analysis of Data section.

Since Beal,[1] Rogers,[2] Voland,[3] and Wilson[4] have contributed extensive reviews of literature on factors related to participation, summarizations of their reviews have been cited in this study. In addition, studies dated since the publication of the above reviews and specific references that

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[1]George M. Beal. The roots of participation in farmer cooperatives. Ames, Iowa. The College Bookstore. 1954.

[2]Everett M. Rogers. Factors related to participation of young adults in public affairs. Unpublished M. S. Thesis. Ames, Iowa. Iowa State College Library. 1955.

[3]Maurice Earl Voland. Factors related to participation in an extension program. Unpublished M. S. Thesis. Ames, Iowa. Iowa State College Library. 1956.

[4]John C. Wilson. Selected personal and social factors related to formal participation of young adults. Unpublished M. S. Thesis. Ames, Iowa. Iowa State College Library. 1955.

are relevant to the unique aspects of the present study, have been cited where appropriate.

General Framework

The basic objective of the present study was to determine the relationship of selected factors to participation in the extension service. Although the sample was limited and the variables were restricted to those used in the original schedule, the analysis of the available data should give valuable insights into differential participation in the extension service.

Sociologically, the extension service and those who participate in its activities can be considered as a relatively complete social system containing two major sub-systems: the relatively clearly defined "core system" and a related system that is less clearly defined. Both sub-systems are an integral part of the total extension program.

The "core system", which is responsible for program administration and is the link between the college and the local people, is made up of professional county and state staff members and lay people who accept the responsibility of conducting the county program. This core system is relatively easily delimited as a system and role definitions of individuals or sub-systems within it are relatively specific. For example, the major role defined for the county family

living committee is planning the home economics extension program. The duties and responsibilities of this committee are formally specified and role expectations accompany these role definitions.

There is a part of the extension service which is made up of those people, other than the core system, who participate in the program and activities of the general system. Participation in the extension service, for the purposes of this study, is broadly defined in that it includes activities that can be accomplished without leaving the home or coming into contact with other persons. Included in participation are personal contacts, meetings, bulletins or leaflets, and mass media such as radio, television, and newspapers. Since all of the women in this study have participated in at least one of the activities of the extension service, as a member of a formal group that uses the extension educational program, they have met at least a minimum requirement of being a part of the system.

The roles and role expectations of these other people are not clearly defined. Role expectations are often expressed only in general terms. These expectations, even though not specifically and completely defined by the "core system", may not have been communicated, understood, or accepted by the other participants in the extension system. The degree of

which homemakers understand the functions and processes of the system and accepted the role expectations of the system is expected to be related to their participation. The present study explores some elements of this relationship.

Past research and personal observations have demonstrated that for many participants in the extension service the roles and role expectations in the system are poorly defined or are not consciously recognized by some participants.

It appears that the use of specific role expectations of the general extension system and the internalization of these role expectations by the participant in formal organizations would not be a very fruitful theoretical framework for attempting to explain extension participation. To the author it appeared that two other frameworks may aid in explaining participation.

The first one is within the role framework. Although these participants may not have internalized the role expectations of the general extension system, they are all aware of the general societal role expectations of people with certain personal, social, and economic characteristics. For example, it is generally recognized that people with a medium to high education and income level are expected to participate in educational activities. This participation is for their own benefit and the benefit of their fellowmen. An analysis of

these personal, social, and economic characteristics and their social definition may aid in the prediction of participation in extension activities.

The second framework is more social-psychological in nature as it is more closely identified to the individual and his values, problems, needs, and desires. Almost all of these have a social basis. For example, it may be found that a woman who has a problem in family nutrition and knows that the extension service has nutrition information may have higher participation. On the basis of this individual need and source of information linkage it may be possible to predict participation.

The variables used in past research leave much to be desired in terms of their social-psychological and sociological character. Primarily those factors which could be easily obtained are used. These factors are indicators such as age, education, and income which can be used to infer true social-psychological variables that may affect participation. The present study, for the most part, has these same limitations since most of the items included in the schedule were of the "indicator" type. A limited attempt was made to construct a rationale for the expected relationships between these variables and participation by drawing from past participation research or logical inferences from more general theory.

Dependent variable - extension participation

The dependent variable used in the present study was participation in the extension service program and activities. Participation has been broadly defined so that it includes all of the methods by which people come into contact with the extension service program or personnel. Participation in the extension service program ranges from the very personal contact of a farm and home visit to the very impersonal contact of reading a newspaper article written by an extension staff member. The difficulty of measuring participation in such diversified activities is readily apparent.

Participation in the extension service program and activities is an indication of the scope of the program. Participation should not be considered as the ultimate end but as a means to accomplish the objectives of the extension service. As such, participation can be one of the important guides for evaluation and program development.

To obtain an extension participation score for the present study, the respondents were asked to indicate during the past year whether:

1. a home economist had visited their home;
2. they had talked to the home economist in her office;
3. they had sent to the county extension office or Iowa State College for any home economics information;

4. they had received any other information sent out by the extension service representatives;
5. they had heard any radio programs on which extension service representatives had spoken;
6. they had read any information in newspapers written by extension service representatives;
7. they had viewed any television programs put on by the extension service representatives;
8. they had attended any meetings (other than those already reported in this questionnaire) sponsored by the extension service or where extension service representatives spoke; and
9. they had had any responsibilities with the extension service (other than those already reported in the questionnaire) such as extension committee member, leader, teacher, demonstrator.

This participation scale did not include all home economics extension or general extension contacts. Respondents were given a maximum of one point for each contact made with the extension service or extension service representatives. Beal[1] reported that research workers found that weighting the items in a scale did not improve the value of the score.

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[1]Beal, op. cit., p. 21.

Voland[1] found that the weighted within and weighted between scores were highly correlated to a simple score similar to the score used in the present study. He reported that any one of these methods would yield an equally satisfactory measure of participation. It may be noted that the extension participation scores of the homemakers in the present study fell basically in a bell shaped distribution skewed to the left (Table 1).

Table 1. Distribution of extension participation scores of homemakers

Score	Number of homemakers
0	73
1	79
2	120
3	146
4	149
5	113
6	87
7	66
8	36
9	15
Total	884

[1]Voland, op. cit., p. 24.

Independent variables

Independent variables analyzed in relation to extension participation in the present study were place of residence, age of homemaker, net income, source of income, children living in the home, level of formal education, home economics training, employment of the homemaker away from home, farm work, participation in formal organizations, number of years in homemaker study group, 4-H club membership, methods homemakers preferred to receive home economics subject matter, understanding of the program planning process, understanding of the duties of the county extension home economist, contacts with non-members, leadership in homemaker study groups, adult 4-H club leadership, children in 4-H and identification of problems in family living. Specific hypotheses and a rationale for each variable used in the present study are presented in the Analysis of Data section.

Sample

The original data from which the present analysis was taken were a part of a national study of home demonstration club members conducted by the Federal Extension Service in cooperation with the states. These data were collected during 1957. The present study was a partial analysis of the data collected in Iowa.

The original study was designed to determine personal, social, and economic characteristics and the understandings, attitudes, interests, needs, and expectations of homemakers who had participated in the formal home economics educational groups.

The Program Research Branch, Division of Extension Research and Training, of the Federal Extension Service, supervised the drawing of the sample states and the sample counties within the states. The counties were selected to represent a larger geographic area than the state alone. The sample counties in Iowa were Butler, Carroll, Clinton, Lee, Marshall, Mills, and Worth (Figure 1). In addition, the Iowa Extension Service added Emmet and Davis counties so that each of the extension supervisory districts had at least one county in the sample.

Each state in the national sample was asked to interpret the term "home demonstration club" to fit its own organizational structure. Iowa chose to use homemaker study groups which participated in the home economics extension program. The following criteria were used to determine the groups in the sample:[1]

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[1]George M. Beal and Mildred K. Wellman. Basebook of tables. Ames, Iowa. Iowa State College Cooperative Extension Service. 1958. (Mimeographed) pp. 9-10.

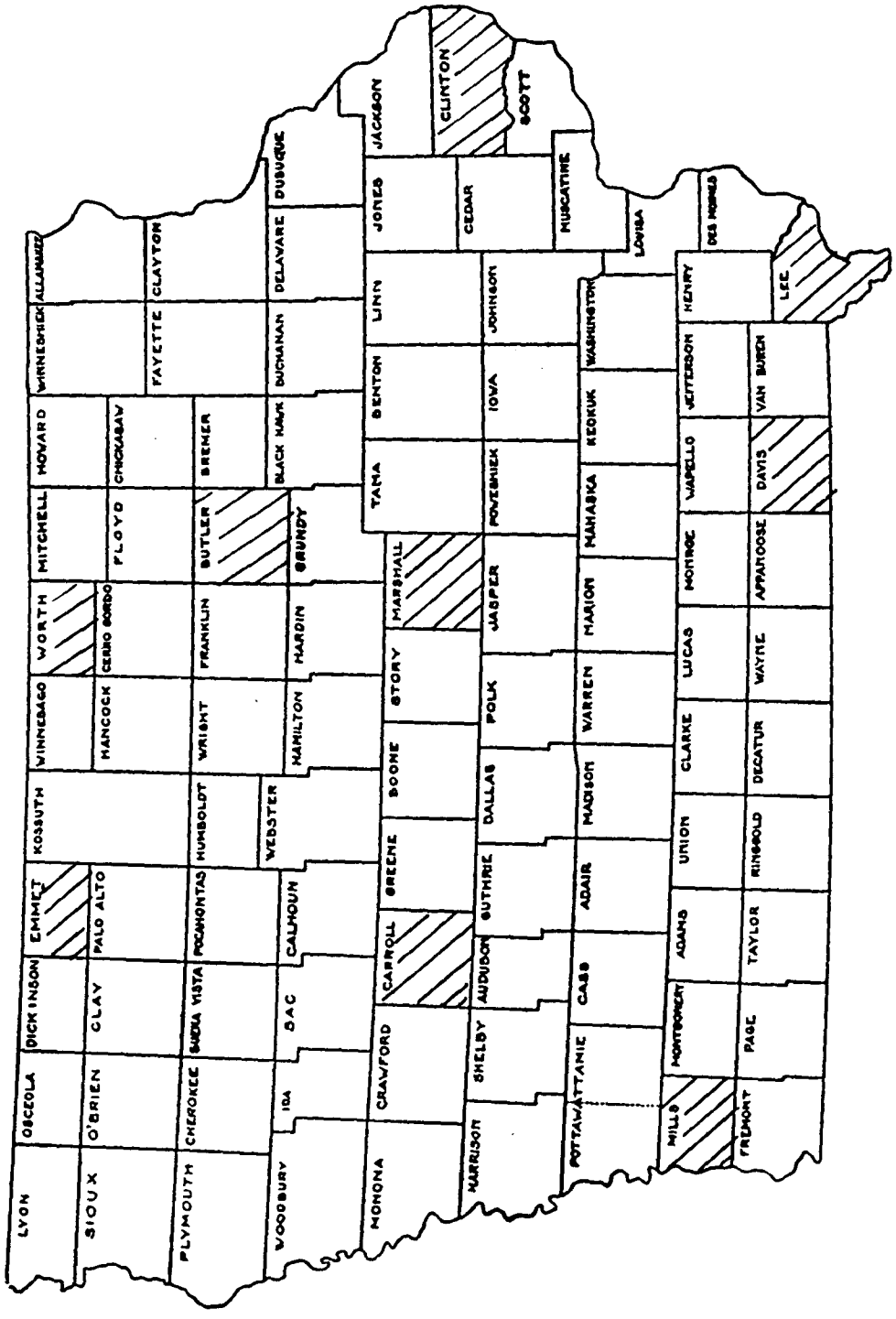

Figure 1. Location of counties in original sample

1. "Homemaker study groups" were defined as those organized groups of women who met together more than twice a year.

2. "Using the home economics extension program" was defined as using 75 per cent of the lessons prepared for the family living program during the past year. The lessons could be used in the form of:
   a. The home economist or other resource persons arranged for by the home economist as a direct teacher.
   b. Materials prepared by the home economist, specialist or other resource persons arranged for by the home economist.
   c. Leaders trained by the home economist or other resource persons arranged for by the home economist.

Within each county the home economist obtained a list of all of the homemakers' groups which met the criteria listed above. After listing the members in each county by clubs, sampling was made at a rate which would obtain a sample of 120 members in each county. A total of 100 completed questionnaires was desired from each county. The national study desired a standard number per county rather than a proportional number from each county. This was impossible in Davis County, where only 54 members were in clubs that met the criteria. Davis therefore was dropped from the present analysis. The total Iowa sample selected for the present study was 959 members. From this sample there were 884 questionnaires returned that were complete enough to be used (Table 2).

Table 2. Distribution of homemakers in the sample by counties

	Number of members in the homemaker study groups	Number of members drawn in the sample	Number of completed schedules obtained
Butler	331	121	100
Carroll	246	123	121
Clinton	810	120	117
Lee	417	120	105
Marshall	815	115	113
Mills	455	122	106
Worth	260	120	107
Emmet	325	118	115
Total	3,659	959	884

Field Procedure

The basic procedure used to obtain completed questionnaires[1] was a direct mailing of the schedule to respondents, and later a personal contact was made to obtain the completed schedule.* A cover letter mailed with each questionnaire

[1]U. S. Department of Agriculture. Study of home demonstration club members. Washington, D.C. Author. 1956. (Mimeographed)

*Copies of the schedule may be obtained from Dr. George Beal, Department of Economics and Sociology, Iowa State College, Ames, Iowa, or from Division of Extension Research and Training, Federal Extension Service, United States Department of Agriculture, Washington, D.C.

explained the purpose of the study and solicited the members' cooperation. In addition, the letter gave the name of the person who would pick up the schedule, the time it would be picked up, and stated that the "pick-up" lady would check the questionnaire for completeness and would answer any questions in relation to the interpretation of specific questions in the questionnaire.

A group of women selected by the county home economist served as "pick-up" contacts. They were given training in the objectives of the study, detailed interpretations of the schedule, and specific instruction about their duties. The lay leader was instructed to check the schedule for completeness and to answer any questions asked about the schedule.

Processing and Analysis of the Data

The county extension home economists supervised the editing of the self-coded schedules for completeness and accuracy of coding before forwarding the schedules to the state extension office. At the state level the questionnaires were again edited for completeness and consistency. These data were then taken from the schedule and punched on four IBM cards. A straight tabular report of the data is available in a basebook of tables entitled "Characteristics of Members of

Formal Home Economics Extension Educational Groups".[1]

To facilitate analysis of the data for the present study, the data from the four original IBM cards were punched on a special analysis card. This card saved time and provided greater ease in handling a large number of cards. All counting and sorting was done by machine.

To determine the statistical significance of the relationship of selected personal, social, and economic characteristics of homemakers to their level of participation, statistical tests of the analysis of variance and biserial correlation were used. Mean participation scores were used to show the direction of this relationship.

Statistically, the sample or findings cannot be interpreted to represent all of the Iowa homemakers who participated in homemaker study groups. The original seven counties drawn by the Program Research Branch were selected to represent a larger geographic area than Iowa. In addition, the Iowa Extension Service added Emmet and Davis counties on an extension supervisory district basis. The Emmet County data were used in the present analysis. The data utilized were taken from the total completed and usable questionnaires from the eight counties. There were two additional possible distortions in these data: 1) disproportional sampling and

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[1]Beal and Wellman, op. cit.

2) non-respondent bias. Within these limitations these data and findings may be generalized to the 3,659 homemakers in the 133 homemakers' study groups who met the criteria set up for the original study.

ANALYSIS OF DATA

A detailed discussion of the analysis of the factors related to extension participation in the present study is presented in this section. Previous research or logical inferences were used to predict expected behavior. Null hypotheses were tested and the statistical values are presented herein. Examples of the statistical methods used by the author may be found in the Appendix.

Place of Residence

In general, previous research studies have indicated that those living nearer to the organizational center have higher participation. Research studies reviewed by Rogers[1] and Wilson[2] tended to substantiate this theory. However, both Rogers[3] and Wilson[4] reported, in their study of young adults, that place of residence was not a significant factor when related to participation. Lawrence[5] reported that farm women

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[1]Rogers, op. cit., pp. 89-94.

[2]Wilson, op. cit., pp. 43-45.

[3]Rogers, op. cit., p. 93.

[4]Wilson, op. cit., p. 45.

[5]Roger Lee Lawrence. Implications of characteristics and attitudes of farm and village women for home economics extension programs. Unpublished Ph. D. Thesis. Ames, Iowa. Iowa State College Library. 1958. pp. 126-134.

had a higher degree of participation in formal and semi-formal activities than did village women. Village women had a higher participation score in informal activities. The New Hampshire study[1] indicated that part-time farmers were least likely to be reached by the extension service and that commercial farm families had the highest participation score. A Nebraska study[2] reported that farm women, when compared to non-farm women, had a higher participation score.

The extension service was created for rural people and only in recent years has the participation of rural non-farm and urban homemakers been encouraged. Therefore, it was expected that the farm women in the present study would have a higher participation score than the rural non-farm, village, or urban homemaker. The null hypothesis is: There is no difference in the participation scores of homemakers when compared on the basis of the place of residence.

Because of the low number of responses in all but the farm, rural non-farm and village categories (Table 3), statistical treatment was used only on those factors. There is a significant difference in the participation scores of the homemakers when compared on the basis of place of residence.

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[1]Neiderfrank, op. cit., pp. 24-26.

[2]Ethel H. Saxton. Homemakers study themselves in Thayer County, Nebraska. Lincoln, Nebraska. University of Nebraska Extension Service. (ca. 1951)

Table 3. Participation scores of homemakers by place of residence

Participation scores	Farm	Rural non-farm	Town population			Suburban
			2,500	2,500-10,000	10,000	
0	58	1	14			
1	60	3	14		1	1
2	94	3	18	1	3	1
3	109	6	26	1	4	
4	131	4	12	1	1	
5	96	2	12		3	
6	76	4	3	1	3	
7	58		5	1	2	
8	31	1	2	1	1	
9	14		1			
Total	727	24	107	6	8	2

Table 4. Participation of homemakers by place of residence

	Number	Per cent	Mean participation score
Farm	727	84.7	3.87
In country but not on a farm	24	2.8	3.54
Village or town with less than 2,500 people	107	12.5	2.93
Total	858	100.0	

The F value is 8.35 when significance at the one per cent level is 4.63. The null hypothesis is rejected.

Age

Most studies reviewed by Rogers[1] indicated a positive relationship between age and level of participation. Beal,[2] however, found that there was no significant relationship between age of cooperative members and their participation in the cooperative's activities. Rogers[3] and Wilson[4] found that

[1]Rogers, op. cit., pp. 60-67.

[2]Beal, op. cit., p. 50.

[3]Rogers, op. cit., p. 67.

[4]Wilson, op. cit., p. 27.

there was no significant relationship between age and participation of young adults. Voland[1] found that younger farmers had a higher extension contact score, but that this difference was not significant. The New Hampshire[2] and Nebraska[3] studies indicated that persons over 40 years of age were likely to have higher participation scores.

It might be expected that younger homemakers are less apt to participate in extension activities because, during the earlier years of marriage, the family is likely to have a shortage of capital and the labor of both the husband and wife is substituted for capital. As a result of the homemaker being occupied with income earning pursuits and having limited capital to be used for participation and having small children in the home, she does not participate outside of the home to any great extent. Another reason for low participation of young homemakers may be that they are not yet accepted in the community or that they have not transferred their allegiance to their new community group. It is expected that at a later age homemakers will tend to "retire" from community activities and participate in fewer extension activ-

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[1]Voland, op. cit., p. 30.

[2]Neiderfrank, op. cit., pp. 24-26.

[3]Saxton, op. cit., p. 17.

ities. The age at which the decline in activities occurs varies, but there is this period of declining activity when the homemaker reduces her activities outside of the home.

It is expected that the younger and older homemakers will have a lower participation score than the middle aged homemakers. The null hypothesis is: There will be no difference in the extension participation scores of homemakers when compared on the basis of age.

In the present study, age was recorded in five year intervals. There is a significant difference in the participation scores. F is 3.09 where significance at the one per cent level is 3.04. The null hypothesis is rejected. There is a significant difference in the participation scores when compared on the basis of age. As expected, the youngest and the oldest homemakers had the lowest participation scores (Table 5).

Income

In his extensive review of research relating socio-economic status to level of participation, Rogers[1] indicated that individuals in higher socio-economic classes tended to have higher participation scores. Gross and net income are among the methods used to determine socio-economic class.

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[1]Rogers, op. cit., pp. 81-89.

Table 5. Participation of homemakers by age

	Number	Per cent	Mean participation score
Under 24 years	30	3.4	3.23
25-29 years	84	9.5	3.31
30-39 years	232	26.2	3.92
40-49 years	236	26.7	4.01
50-59 years	188	21.3	3.84
60 years or older	114	12.9	3.26
Total	884	100.0	

Other methods are tenure status, occupation, and objective socio-economic scores. Rogers[1] found no significant difference between income and participation in governmental affairs by young adults. However, Wilson[2] found the reverse to be true for young adults. Beal[3] reported a significant positive relationship between socio-economic status and participation in cooperatives. Voland,[4] in an extension study, found a

[1] Ibid., p. 88.

[2] Wilson, op. cit., p. 64.

[3] Beal, op. cit., p. 61.

[4] Voland, op. cit., pp. 32-33.

similar relationship when comparing net worth to the level of extension contacts by farm operators.

Respondents were asked to indicate their net income after farm and business expenses were deducted. It is expected that net income will be positively related to the level of participation in an extension program. The hypothesis in the null form: There is no difference in the extension participation scores of homemakers when compared on the basis of net income. The participation scores are significantly different; F is 4.21 where significance at the one per cent level if 2.67. The null hypothesis is rejected. There is a relationship between the level of income and participation in an extension program. The homemakers from the higher income groups tended to have a higher participation score, though the relationship is not consistent for all categories (Table 6).

Another indicator of socio-economic status is source of income. With the rapidly changing agricultural situation, where families living in the open country may derive all, part, or none of their income from the farm, the source of the family income may be a factor related to status and to participation in an extension service program.

Since the extension service was organized to serve farm people, it might be expected that homemakers who received their income from the farm would be more active in the extension service. The extension service offers more

Table 6. Participation of homemakers by amount of net income

	Number	Per cent	Mean participation score
Less than $1,000	115	14.1	3.05
$1,000 - $1,499	97	11.9	3.78
$1,500 - $2,499	162	19.9	3.52
$2,500 - $3,499	164	20.1	4.01
$3,500 - $4,499	166	20.3	4.17
$5,000 - $6,999	70	8.6	4.43
$7,000 - $9,999	26	3.2	3.58
$10,000 or over	16	1.9	4.56
Total	816	100.0	

direct assistance for those families making a living from the farm and it might be expected that families who earn their living from the farm would utilize the extension service more completely.

The homemakers were asked to indicate the source of their income. They were asked whether all of their income came from farming; about half of their income came from farming; less than one-half came from farming; or that none came from farming.

It is expected that level of participation of homemakers

will be significantly different by source of income. The null hypothesis is: There is no difference in the extension participation score of homemakers when compared on the basis of the source of income. F is 4.27 where significance at the one per cent level is 3.81. The null hypothesis is rejected. There is a significant relationship between the source of income and level of participation by homemakers in an extension program. Those who receive all their income from farming had the highest score (Table 7).

Table 7. Participation of homemakers by source of income

	Number	Per cent	Mean participation score
All from farming	677	76.6	3.88
About one-half from farming	58	6.6	3.67
Less than one-half from farming	41	4.6	3.34
None from farming	108	12.2	3.13
Total	884	100.0	

Children Living in the Home

The stage of the family cycle was reported in a review of literature by Beal[1] and other research workers[2] as an important factor in differentiating social participation. Rogers[3] reported in his study that the family cycle has no effect upon participation of young adults. Beal[4] had a similar finding for cooperative members. The New Hampshire[5] and Nebraska[6] studies report participants in the extension service who had teenage and sub-teenage children tended to have higher participation scores.

The respondent was asked to indicate the number of people living in her home. Each was instructed to list herself, her husband, relatives, number of children and hired help living in the home. As a result, the data used in this study reflects the number of children under 19 years of age who live in the home, rather than the number of children in the family or the stage of the family cycle. Although this

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[1]Beal, op. cit., pp. 52-53.

[2]See Wilson, op. cit., pp. 38-42; Rogers, op. cit., pp. 72-76.

[3]Rogers, op. cit., p. 76.

[4]Beal, op. cit., p. 53.

[5]Neiderfrank, op. cit., pp. 24-26.

[6]Saxton, op. cit., p. 17.

variable fails to take into consideration families that have children in more than one age category this variable should give limited information to help understand differential participation in the extension service.

It is expected that there will be a significant relationship between participation and whether or not there are children in the home. Homemakers with children at home are expected to have a higher participation score than homemakers without children at home. The null hypothesis is: There is no relationship between homemakers' participation scores and whether or not there are children living in the home. There is a significant relationship. The coefficient of correlation is +.054 where significance at the five per cent level is .066. The null hypothesis is not rejected. Homemakers with children living in the home had higher participation scores than homemakers without children in the home (Table 8).

Table 8. Participation of homemakers by children under 19 in the home

	Number	Per cent	Mean participation score
Children living in home	609	67.7	3.82
No children	275	32.3	3.69
Total	884	100.0	

It is expected that the homemaker's participation in extension activities will vary with the number of children in each age group. The null hypothesis is: There will be no difference in the extension participation scores of homemakers when compared on the basis of the number of children in each age group.

All F values (Table 9) are significant at the one per cent level, except for the 5-9 and 15-19 year categories. The 15-19 year category is significant at the five per cent level; the 5-9 year category is not significant. The null hypothesis is rejected for all groups. There is a difference in the

Table 9. Comparison of F values by age groups of children living in home

Age group	F value	Significant F value
Under 5 years	7.61	3.81
5-9 years	1.36	2.61
10-14 years	5.34	3.81
15-19 years	2.93	2.61

homemakers' extension participation scores when compared on the basis of the number of children in each age group living in the home. The highest participation scores are for those homemakers with three children 15-19 years old living in the home, while the homemakers with three or more children 5-9

Table 10. Participation of homemakers by number of children under 5 years in the home

Number of children	Number	Per cent	Mean participation score
None	654	74.0	3.58
One	147	16.6	3.59
Two	65	7.4	3.34
Three or more	18	2.0	3.61
Total	884	100.0	

Table 11. Participation of homemakers by number of children 5-9 years in the home

Number of children	Number	Per cent	Mean participation score
None	595	67.3	3.75
One	201	22.7	3.95
Two	66	7.5	3.53
Three and more	22	2.5	3.09
Total	884	100.0	

Table 12. Participation of homemakers by number of children 10-14 years in the home

Number of children	Number	Per cent	Mean participation score
None	578	65.4	3.57
One	207	23.4	3.98
Two	83	9.4	4.49
Three	16	1.8	4.12
Total	884	100.0	

Table 13. Participation of homemakers by number of children 15-19 years in the home

Number of children	Number	Per cent	Mean participation score
None	632	71.5	3.64
One	185	20.9	4.01
Two	54	6.1	4.07
Three	13	1.5	5.08
Total	884	100.0	

years of age have the lowest participation score (Tables 10-13).

Education

Level of formal education and home economics training were analyzed to determine the relationship of homemakers' education to level of participation in an extension program. Each area of education was treated separately.

Beal,[1] Wilson,[2] Rogers,[3] and Voland,[4] in their review of participation studies, supported the theory that years of formal education were positively related to level of participation. Beal,[5] in his study of cooperatives, reported a tendency for cooperative members with a higher educational level to have a higher participation score, but that this tendency was not statistically significant. Rogers[6] and Wilson,[7] in their study of young adult participation, reported similar findings.

Voland[8] reported that with farm operators the level of

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[1]Beal, op. cit., pp. 50-52.

[2]Wilson, op. cit., pp. 34-38.

[3]Rogers, op. cit., pp. 76-81.

[4]Voland, op. cit., pp. 35-36.

[5]Beal, op. cit., p. 52.

[6]Rogers, op. cit., pp. 80-81.

[7]Wilson, op. cit., p. 38.

[8]Voland, op. cit., pp. 35-36.

participation tended to be related to the level of education, but this tendency was not statistically significant. Nebraska[1] and New Hampshire[2] extension studies reported those participants in an extension program who had some college training had the highest participation scores.

Respondents were asked to indicate the highest grade completed in school by checking the following categories: 1st - 4th grade, 5th - 6th grade, 7th grade, 8th grade, 1 - 3 years of high school, 4 years of high school, 1 - 3 years of college, 4 years or more of college. Only three women indicated having completed a maximum of 1 to 4 years of formal schooling and 10 women indicated the highest grade completed as 5th or 6th grade. Because of the low number of responses, the first three categories were combined.

It is expected that there will be significant differences in participation and level of education will be positively related to participation in an extension program. The hypothesis in the null form is: There will be no difference in the extension participation scores of homemakers when compared on the basis of formal education.

The participation scores are significantly different (Table 13). F is 64.43 where significance at the one per

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[1]Saxton, op. cit., p. 17.

[2]Neiderfrank, op. cit., pp. 24-26.

Table 14. Participation of homemakers by level of formal education

Years of formal schooling	Number	Per cent	Mean participation score
1st - 7th grade	28	3.2	2.79
8th grade	148	16.7	3.24
1 - 3 years of high school	99	11.2	3.45
4 years of high school	393	44.5	3.74
1 - 3 years of college	179	20.2	4.46
4 years or more of college	37	4.2	4.27
Total	884	100.0	

cent level is 3.04. The null hypothesis is rejected. In general, there is a relationship between the level of participation and level of formal education.

Respondents were asked to indicate whether they had studied home economics in: high school only; college only; both high school and college; and adult education only. The question was worded so that it was impossible for the respondents to indicate whether they had high school and/or college training and adult education training in home economics. As a result, this question does not give a complete and accurate picture of the home economics training of the

members of this sample. This question does, however, give a limited indication of the home economics training the respondents have received.

Studies previously reported in this section indicated participation increased as the level of education increased. It is to be expected that the level of participation will increase when the homemakers participate in high school and college home economics classes. Chadderdon and Lyle[1] indicated a disproportionate number of high school and college graduates in adult homemaking classes in Iowa. It is expected that there will be a significant difference on the basis of home economics training and those with the training will have higher extension participation scores. The hypothesis in the null form is: There will be no difference in the extension participation scores of homemakers when compared on the basis of participation in home economics training.

The participation scores are significantly different. F is 19.95 where significance at the one per cent level is 3.34. The null hypothesis is rejected. There is a significant difference in the level of participation in extension when homemakers are compared on the basis of home economics training. Homemakers who had college home economics training

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[1]Hester Chadderdon and Mary S. Lyle. Reasons given by Iowa women for attending homemaking classes for adults. Iowa Agr. Exp. Sta. Special Report No. 12. 1955. p. 3.

Table 15. Participation of homemakers by home economics training

Home economics training	Number	Per cent	Mean participation score
No home economics training	285	32.2	3.07
Home economics training			
High school only	502	56.8	3.87
College only	8	.9	5.62
Both high school and college	35	4.0	5.46
Adult education classes only	54	6.1	5.07
Total	884	100.0	

had the highest scores and those with no training the lowest scores (Table 15).

Employment of the Homemaker

A review of current research failed to indicate any research on the relation of the employment of the working homemaker to participation. It would seem logical that the homemakers who were employed outside of the home would be less likely to participate in extension activities. The homemakers who hold a full-time job away from the home would be unable to attend the daytime meetings and would not readily have the opportunity to participate in some of the activities included on the participation scale. The majority of the television

and radio programs, home and office visits would be conducted during the hours that the homemakers are working. In addition, one might reason that working homemakers use their evenings to maintain their home and housework so they have less time for participation in the evening programs of the extension service.

Homemakers in this study were asked to indicate whether they worked away from home for pay and whether this was a full-time or part-time job. A full-time job was defined as 35 hours or more a week.

It is expected that the participation scores of homemakers who work away from home will be lower than those who do not work away from home. The null hypothesis is: There is no difference in homemakers' participation scores when compared on the basis of work away from home.

There is a significant difference in the participation scores. F is 4.10 when significence at the one per cent level is 3.00. The null hypothesis is rejected. There is a significant difference in participation scores when compared on the basis of employment of homemakers away from home. Full-time workers had the lowest participation scores, while the part-time workers had the highest participation scores. Although it is significant, the direction of the findings were not as expected (Table 16).

Another factor which may affect participation in the

Table 16. Participation of homemakers by amount of work away from home for pay

Amount of work	Number	Per cent	Mean participation score
No work (away from home)	786	88.9	3.78
Part-time work (less than 35 hours per week)	67	7.6	4.06
Full-time work (35 hours a week or more)	31	3.5	2.71
Total	884	100.0	

extension service is whether or not homemakers are involved in farm work. Respondents were asked to indicate whether or not they did farm work. Farm work was defined in the questionnaire as driving trucks or tractors, commercial poultry or dairy work, truck crops, harvesting, keeping books, and other farm work. The inclusion of keeping farm records as a part of farm work is a broader definition than most commonly used. It might be argued that since family participation in the farming operation is an accepted practice, the real significance would be in the amount of farm work rather than whether the homemakers do farm work. The homemaker has more freedom to choose her working hours and days and is able to adjust her farm work schedule so that she can participate in the extension activities. Much of her farm work is at the

time of day when it will not conflict with the extension activities.

It is expected that there will be no significant relationship between the level of participation of homemakers and farm work. The null hypothesis is: There will be no relationship between participation of homemakers and farm work.

Investigation shows that women who do farm work have a higher participation score than women who do not do farm work. There is a significant relationship between the participation scores (Table 17). The coefficient of correlation is +.1567

Table 17. Participation of farm homemakers by whether or not they do farm work

	Number		Per cent		Mean participation score	
Does no farm work	426		48.2		3.58	
Does farm work	343		33.8		4.20	
Seasonally		142		16.1		4.24
Year around		196		22.7		4.19
Total	769		100.0			

where significance at the one per cent level is .0868. The null hypothesis is rejected. The direction of this finding was not as expected.

Homemakers who do farm work all year might be expected

to have fewer contacts than the women who do seasonal farm work. The homemaker who devoted considerable time to farm work is less likely to be able to attend and participate in other activities. The null hypothesis is: There is no relationship between homemakers' participation scores and the length of time devoted to farm work. The coefficient of correlation is +.0107 which fails to exceed the five per cent level of significance (.0658). The null hypothesis is not rejected. There is no significant relationship between the participation scores of homemakers and the duration of farm work although the homemakers who work seasonly have a higher participation score than those who do not do farm work or those who work year around (Table 17).

Methods Homemakers Preferred to Receive Information

Homemakers participating in this study were asked to indicate the method they preferred to receive information from the county extension home economist. They were asked to give their first three choices of the following methods: radio, television, meetings, newspapers or magazines, and leaflets or bulletins.

Fifty-four per cent of the homemakers chose meetings as their first choice. Bulletins had the next highest number of

first choices. It may be of interest that 75 per cent of the homemakers in this study did not prefer the radio as a method of receiving information from the home economist. It should be pointed out that this sample may be selective towards meetings, since to be included in this sample a homemaker had to be a member of an organized group participating in the extension program.

Traditionally, the extension service has disseminated its information to local people through bulletins and meetings. It has only been in recent years that an effort has been made to use mass media to teach people. It is expected that those homemakers who have higher participation scores in the extension service will prefer to receive information through meetings and bulletins, and those with a lower participation score will prefer the other methods.

The hypothesis in the null form is: There will be no difference in the participation scores when compared on the basis of preference of receiving information from the home economist. There is a significant difference in the participation scores. Table 18 gives the comparison of F values. The null hypothesis is rejected for all methods.

There is a significant difference in the participation scores of homemakers when compared on the basis of the method preferred to receive information from the home economist.

Table 18. Comparison of F values by method preferred to receive information

Method	F value	Significant F value at One per cent level	Five per cent level
Radio	5.91	3.81	
Television	8.23	3.81	
Meetings	17.29	3.81	
Newspaper or magazines	2.77		2.61
Leaflets or bulletins	4.52	3.81	

The homemakers who chose meetings as their first choice had the highest participation score, while those who did not choose meetings as a method of receiving information had the lowest participation scores. The homemakers who indicated bulletins for their first choice as a source of information have the next highest participation score (Tables 19-23).

Leadership Experience

In considering leadership in the county extension service, the women who are leaders of the homemaker study groups are considered as one of the most important parts of the extension lay leadership. Assuming that the leaders of the homemaker study groups understand this relationship, they

Table 19. Participation of homemakers by preference of radio as a source of information

Choice	Number	Per cent	Mean participation score
First choice	44	5.0	3.05
Second choice	74	8.4	2.92
Third choice	97	10.9	3.87
Not preferred	669	75.7	3.89
Total	884	100.0	

Table 20. Participation of homemakers by preference of meetings as a source of information

Choice	Number	Per cent	Mean participation score
First choice	478	54.1	4.78
Second choice	157	17.8	3.82
Third choice	112	12.6	2.98
Not preferred	137	15.5	2.85
Total	884	100.0	

Table 21. Participation of homemakers by preference of leaflets or bulletins as a source of information

Choice	Number	Per cent	Mean participation score
First choice	156	17.6	3.46
Second choice	330	37.3	4.10
Third choice	196	22.2	3.71
Not preferred	202	22.9	3.49
Total	884	100.0	

Table 22. Participation of homemakers by preference of newspaper or magazines as a source of information

Choice	Number	Per cent	Mean participation score
First choice	74	8.4	3.32
Second choice	180	20.4	3.38
Third choice	254	28.7	3.81
Not preferred	376	42.5	3.99
Total	884	100.0	

Table 23. Participation of homemakers by preference of television as a source of information

Choice	Number	Per cent	Mean participation score
First choice	138	15.6	3.07
Second choice	141	16.0	3.96
Third choice	201	22.7	4.23
Not preferred	404	45.7	3.69
Total	884	100.0	

would be more likely to feel a responsibility to participate in the other phases of the program. Extension personnel are more likely to have a direct contact with these leaders, since they are the means of extending the home economics lessons to the homemakers of the county. This fact would also tend to increase participation.

It is expected that the officers, project leader or chairman, committee or activity chairman, and those accpeting other leadership responsibility would have higher participation scores than those who have not accepted such responsibility. Since some of the types of leadership responsibilities of the formal leaders of the homemakers' study groups are involved in the extension participation score, this analysis is not as discriminating as other factors. The null hypoth-

thesis is: There is no relationship between the participation scores of homemakers and leadership responsibility in the local homemakers' groups.

Homemakers were asked to indicate whether they were presently serving or had served in any of the leadership positions listed above. The participation scores for the homemakers who have been or are officers in their local group are higher than those who have not served in this capacity (Table 24). This relationship is significant as

Table 24. Participation of homemaker by whether or not officer of homemaker study group

	Number	Per cent	Mean participation score
Was not an officer	647	73.2	3.51
Officer	237	26.8	4.46
Total	884	100.0	

the coefficient of correlation is +.2537 where significance at the one per cent level is .0659. The null hypothesis for officers is rejected.

There is a significant relationship between being project

leader or chairman and participation. The coefficient of correlation is +.4411 where significance at the one per cent level is .0868. The null hypothesis for project leaders or chairmen is rejected. The same significant relationship is true for the committee or activity chairman when the coefficient of correlation is +.3505 where significance at the one per cent level is .0868. The null hypothesis for the relationship of the activity or committee chairman to participation is rejected.

The participation scores of those homemakers having other leadership responsibilities is higher than those who have not held such positions. This relationship is significant. The coefficient of correlation is +.2104 where significance at the one per cent level is .0868. The null hypothesis is rejected.

Evidence presented indicates that the relationship of project leader or chairman and committee or activity chairman is significant at the one per cent level. The relationship of the officers to extension participation is significant but at the five per cent level. The relationship of the homemakers who had other leadership responsibilities is not significant. The homemakers who had or were serving as officers of their homemaker study groups had the highest participation scores (Tables 25-27).

Table 25. Participation of homemakers by whether or not project leader or chairman of homemaker study group

	Number	Per cent	Mean participation score
Was not project leader	621	70.2	3.92
Project leader	263	29.8	4.85
Total	884	100.0	

Table 26. Participation of homemaker by whether or not committee or activity chairman of homemaker study group

	Number	Per cent	Mean participation score
Was not committee chairman	657	74.3	3.42
Committee chairman	227	25.7	4.74
Total	884	100.0	

Table 27. Participation of homemakers by whether or not had other leadership responsibility in homemaker study group

	Number	Per cent	Mean participation score
Had no other leadership responsibility	786	88.9	3.66
Had other leadership responsibility	98	11.1	4.56
Total	884	100.0	

Adult leaders of the 4-H club program have a similar relationship to the extension service as the homemaker study group leaders. Because 4-H leaders are responsible for conducting the 4-H club program in the local community and the county extension staff members are responsible for training these leaders, it is expected that they would come into contact with more phases of the extension program. It is expected that the adult 4-H leaders will have higher participation scores than those women who have not been 4-H leaders. The null hypothesis is: There is no relationship between homemaker participation scores and whether or not the homemaker has been 4-H club leader.

Respondents were asked to indicate whether they were currently or had been local 4-H club leaders. There is a significant relationship between the participation score and whether or not the homemaker had served as a 4-H club leader. The coefficient of correlation is +.4222 where significance at the one per cent level is .0868. The null hypothesis is rejected. Homemakers who have been or are 4-H leaders have a higher participation score than any other leadership responsibility analyzed in this study (Table 28).

Table 28. Participation of homemakers by adult 4-H club leadership

	Number	Per cent	Mean participation score
Have not been 4-H leader	716	81.0	3.45
Have been or is 4-H leader	168	19.0	5.11
Total	884	100.0	

Children in 4-H

Beal[1] suggested that the participation of adults in formal group activity increased when their children entered school and the accompanying activities of school-age groups. One could expect the same reasoning to hold true for the 4-H club program in that when a child enrolls in 4-H his parents are more likely to become more involved in other extension activities. A great many activities in 4-H club work involves parents of the members and as a result they have an opportunity to become intimately involved in the whole extension program.

Since the 4-H club program is an integral part of the

[1]Beal, op. cit., p. 36.

extension service, it is expected that the parents of 4-H club members will be more involved in the extension program. The null hypothesis is: There will be no relationship between the participation scores of homemakers and whether their children are in 4-H club work. Participation scores of the homemakers whose children are in 4-H tend to be higher (Table 29).

Table 29. Participation of homemakers by children in 4-H

	Number	Per cent	Mean participation score
Children in 4-H	442	50.0	4.33
Children not in 4-H	442	50.0	3.20
Total	884	100.0	

This relationship is significant. The coefficient of correlation is +.3176 where significance at the one per cent level is .0868. The null hypothesis is rejected. There is a positive relationship between having children in 4-H club work and participation of homemakers in an extension program.

Participation in Formal Organizations

Two specific areas were considered in analyzing the homemakers' participation in formal organizations. First, the number of organizations to which homemakers belonged was related to the level of participation in an extension service program. Second, the type of groups to which homemakers belonged was related to extension participation.

Previous research[1] showed that participation in one type of activity tended to be correlated to participation in other activities or organizations. It appeared that a person who learned the social skills required for participation in formal organizations or activities was likely to be active in a variety of groups. Voland[2] found that farm operators who have high formal organization participation scores also have high extension contact scores.

It is expected that homemakers in the present study will follow the participation pattern found in previous research. The hypothesis in the null form is: There is no difference in the extension participation scores of homemakers when compared on the basis of the number of formal organizations to which they belong.

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[1]See Beal, op. cit., pp. 58-60.

[2]Voland, op. cit., p. 34.

There is a significant difference in the participation scores of homemakers when analyzed on the basis of the number of organizations to which they belong. The participation score tends to be higher as the number of organizations increases (Table 30). F is 22.73 when significance at the one

Table 30. Participation of homemakers by total number of groups to which they belong

Number of groups	Number	Per cent	Mean participation score
None	32	3.6	2.28
One	80	9.1	2.46
Two	182	20.6	3.26
Three	211	23.8	3.70
Four	126	14.3	3.75
Five	99	11.2	4.62
Six	82	9.3	4.24
Seven	39	4.4	5.31
Eight to twelve	33	3.7	6.00
Total	884	100.0	

per cent level is 2.53. Therefore, the null hypothesis is rejected.

Homemakers were asked to indicate the number of organizations other than extension education groups to which they be-

longed. They were asked to indicate the number of organizations in the following groups: women's clubs such as federated, garden, reading, and study; church organizations such as missionary, circles, young people's leader, and Sunday School teacher; farm organizations such as Farm Bureau, Grange, and Farmers' Union; community groups such as lodges, political, PTA, and school boards.

The general relationship between the number of organizations and participation has been established. In order to determine whether this relationship is consistent for all categories, additional analysis of data was made. When comparing the number of organizations to which a homemaker belongs in each of the categories to the level of participation, it is expected that the homemaker who participates in more than one of the organizations in each of the categories will have a higher participation score. The null hypothesis is: There is no difference in the participation score of homemakers when compared on the basis of the number of organizations within each category to which the women belong. Table 31 indicates the F values for each organizational category. The null hypotheses are rejected. There is a significant difference in participation when compared on the basis of the numbers of organizations to which homemakers belong in each of the categories.

Table 31. F values by types of organizations to which homemakers belong

Type of organization	F value	Significant F value at the one per cent level
Women's clubs	5.09	3.34
Church organizations	11.77	3.34
Farm organizations	37.96	4.63
Community groups	14.71	3.81

In summary, the participation scores increase as the number of organization memberships increase with the exception of the homemakers who belong to four or more groups in the women's clubs category (Tables 32-35). In the latter case the participation score drops. The highest participation scores are for the women who belong to three or more

Table 32. Participation of homemakers by number of farm organizations to which they belong

Farm organizations	Number	Per cent	Mean participation score
None	305	34.5	2.90
One	545	61.7	4.19
Two or more	34	3.8	4.53
Total	884	100.0	

Table 33. Participation of homemakers by number of church organizations to which they belong

Number of church organizations	Number	Per cent	Mean participation score
None	154	17.4	3.03
One	392	44.3	3.58
Two	227	25.7	4.11
Three	82	9.3	4.60
Four or more	29	3.3	4.97
Total	884	100.0	

Table 34. Participation of homemakers by number of women's clubs to which they belong

Number of women's clubs	Number	Per cent	Mean participation score
None	447	50.6	3.54
One	282	31.9	3.77
Two	115	13.0	4.17
Three	23	2.6	5.04
Four or more	17	1.9	4.88
Total	884	100.0	

Table 35. Participation of homemakers by number of community groups to which they belong

Number of community groups	Number	Per cent	Mean participation score
None	424	48.0	3.26
One	320	36.2	4.06
Two	115	13.0	4.31
Three or more	25	2.8	5.52
Total	884	100.0	

community groups. The lowest mean participation score is for the group of homemakers who belong to no farm organizations.

Years in Homemaker Study Group

No previous research was found that specifically tested a hypothesis that would indicate the relationship between years of membership in an adult organization which was a part of the extension service and an extension participation score. It might logically be assumed that continued experience in an organization which is a part of the extension service would tend to encourage further participation in other phases of the extension service program. The hypothesis stated in the null form is: There is no difference in the extension par-

ticipation scores of homemakers when compared on the basis of the number of years in the homemakers' study groups. There is a significant difference in the participation scores. F is 25.70 as compared to 3.04 at the one per cent level. The null hypothesis is rejected. There is a significant difference in the homemaker participation scores when compared on the basis of the years of membership in a homemakers' study group. The highest participation scores are for the homemakers who have belonged to the group for 20 or more years, while the lowest scores are for those who have belonged for less than 2 years (Table 36).

Table 36. Participation of homemakers by years of membership in homemakers' study group

	Number	Per cent	Mean participation score
Less than 2 years	196	22.2	2.68
2-4 years	173	19.6	3.14
5-9 years	203	23.0	3.92
10-14 years	109	12.3	4.56
15-19 years	66	7.5	4.53
20 years and over	136	15.4	4.89
Total	884	100.0	

4-H Club Membership

Aronson[1] reported that former 4-H club members tended to be more familiar with the county extension staff members, requested information from the extension service, attended meetings where extension personnel participated, and were visited by the county staff members more frequently than non 4-H club members who are farmers. These findings indicate that membership in the 4-H club program is related to participation in the entire extension program.

The hypothesis in the null form is: There is no relationship between extension participation scores of homemakers and 4-H club membership. The participation scores tend to be higher for those homemakers who have been 4-H club members, and this relationship is significant (Table 37). The coeffi-

Table 37. Participation of homemakers by 4-H club membership

	Number	Per cent	Mean participation score
Not a 4-H club member	650	73.5	3.60
4-H club member	234	26.5	4.20
Total	884	100.0	

[1]Aronson, Ronald Frazier. Relation of 4-H club participation to continuation of out-of-school education. Unpublished M.S. Thesis. Ames, Iowa. Iowa State College Library. 1958.

cient of correlation is +.1600 and significance at the one per cent level is .0868. The null hypothesis is rejected, therefore, there is a significant relationship between participation scores of homemakers and their membership in 4-H.

Understanding of the Extension Service

Two specific areas indicating an understanding of the extension service were analyzed to determine their relationship to the level of participation by homemakers. The two areas were the understanding of the county extension home economist's responsibility and the method of planning the extension home economics program. No previous research testing the relationship of these characteristics to the level of participation was located by the author.

Beal,[1] in his review of literature on cooperative participation, reported that research indicates that understanding of the principles of cooperatives appeared to be highly related to participation. His study showed a highly significant positive relationship between understanding of cooperative principles and the level of participation in the cooperative. Thus, it would seem logical that homemakers who were familiar with the operation of the county extension service and understood the county home economist's responsibility

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[1]Beal, op. cit., pp. 70-72.

would be more likely to visit her in the office, or have her come to the family home, read newspaper articles, listen to the radio, and watch television programs presented by the extension service. Particularly pertinent is the fact that the homemakers who understood the duties and responsibilities of the home economist are more likely to share in the leadership responsibilities of the program.

By an open end question in the schedule each respondent was asked to state her understanding of the responsibility of the county home economist. Nearly 23 per cent of the homemakers indicated they did not know what the home economist's duties were or did not answer the question. The replies were coded and given a weighted value by the author. The scale used was 5 points, very good understanding; 4 points, good understanding; 3 points, average understanding; 2 points, fair understanding; 1 point, poor understanding. Roger Lawrence, Extension Training Specialist at Iowa State College, reviewed the ratings and was in basic agreement with the author.

On the basis of previous logic, it seems reasonable that the level of participation would be positively related to the understanding of program planning and the understanding of the responsibility of the home economist. The hypothesis in the null form is: There is no difference in the participation score of the homemakers when compared on the basis of the understanding of the home economist.

There is a significant difference in the participation scores. The F value is 28.28 where significance at the one per cent level is 3.34. The null hypothesis is rejected. There is a significant difference in the participation scores of homemakers when compared on the basis of the understanding of the county home economist's responsibility. In general, the more complete the understanding of the home economist's responsibility the higher the participation, although this relationship is not consistent in all categories (Table 38).

Table 38. Participation of homemakers by understanding of the responsibility of the county home economist

Level of understanding	Number	Per cent	Mean participation score
Didn't know	201	22.7	2.57
Fair	12	1.4	3.58
Average	73	8.3	3.41
Good	486	54.9	4.02
Very good	112	12.7	5.01
Total	884	100.0	

The extension service, through the years, has attempted to plan a program that meets the needs of the local people. To aid in developing such a program, the professional staff have involved the local people in the program planning

process. There has been a constant effort to make the extension program the people's program. As a result of this background it is expected that the people who know how the program is planned will participate to a greater extent than those who do not understand the extension program.

Homemakers were asked to indicate which of the following they thought planned the home economics extension program in their county: local groups and clubs, program planning committee, voluntary leaders, state extension staff, county extension council, county extension home economist, and the family living committee. Their choices were not limited. The method of program planning varied a great deal from county to county.* With the choices not limited, the number of possible combination answers is evident. Since the local groups and clubs, program planning committee, and voluntary leaders were perceived to be similar in nature by a number of home economists, these categories were grouped together. With the exception of the above category, each of the possible planning groups were analyzed separately. In addition to the subgroups, the combination of the family living committee, county extension council, and the county home economist were analyzed.

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*The author wrote to each of the county home economists involved in this study and asked them to indicate to what degree each group was involved in the program planning process.

The family living committee, county extension council, and home economist are delegated the responsibility of planning the home economics extension program. It would be logical to assume that those who knew and understood this procedure would be more likely to have higher participation scores. It is also expected that the participation of homemakers would be related to the degree to which they thought that the program was planned by the county, rather than state level people.

The hypothesis in the null form is: There is a difference in the participation scores of homemakers when compared on the basis of their understanding of the program planning process. There is no significant difference in the participation scores. The F values are in Table 39.

Table 39. Comparison of F values by the methods of planning the home economics extension program

	F value	Significant F value at the one per cent level
Lay people or groups	45.90	3.81
State extension staff	46.41	3.81
County extension council	51.48	3.81
County home economist	17.77	3.81
Family living committee	51.96	3.81
Included all of the last three	48.05	3.81

The highest participation scores were for the homemakers who mentioned all three: county home economist, county extension council, and the family living committee, as having a part in planning the program. The next highest scores, in order, were for the county extension council, family living committee, and the state extension staff (Table 40-45).

Those homemakers who did not know or did not answer the question had the lowest participation scores.* Homemakers who

Table 40. Participation of homemakers by whether or not they thought the state extension staff planned the county home economics extension program

	Number	Per cent	Mean participation score
No answer	55	6.2	1.69
Don't know	259	29.3	2.95
Checked state extension staff	124	14.0	4.59
Checked other than state extension staff	446	50.5	4.28
Total	884	100.0	

*It may be of interest to the reader that those homemakers who checked only the home economist and/or the state extension staff members as the program planning group had a lower participation score than those who indicated they didn't know how the program was planned. The mean participation score for these homemakers was 2.81. Although the number of homemakers is small, the difference is significant.

Table 41. Participation of homemakers by whether or not they thought the family living committee planned the county home economics extension program

	Number	Per cent	Mean participation score
No answer	55	6.2	1.69
Don't know	259	29.3	2.95
Checked family living committee	333	37.7	4.62
Checked other than family living committee	237	26.8	3.93
Total	884	100.0	

Table 42. Participation of homemakers by whether or not they thought the local groups and clubs, or program planning committee, or a group of voluntary leaders planned the county home economics extension program

	Number	Per cent	Mean participation score
No answer	55	6.2	1.69
Don't know	259	29.3	2.95
Checked local groups and clubs or program planning committee or a group of voluntary leaders	194	22.0	4.31
Checked other than the above groups	376	42.5	4.34
Total	884	100.0	

Table 43. Participation of homemakers by whether or not they thought the county extension home economist planned the county home economics extension program

	Number	Per cent	Mean participation score
No answer	55	6.2	1.69
Don't know	259	29.3	2.95
Checked county extension home economist	295	33.4	4.37
Checked other than county extension home economist	275	31.1	4.29
Other	884	100.0	

Table 44. Participation of homemakers by whether or not they thought the county extension council planned the county home economics extension program

	Number	Per cent	Mean participation score
No answer	55	6.2	1.69
Don't know	259	29.3	2.95
Checked county extension council	170	19.2	4.73
Checked other than county extension council	400	45.3	4.28
Total	884	100.0	

Table 45. Participation of homemakers by whether or not they thought the county home economist, county extension council, and family living committee planned the county home economics extension program

	Number	Per cent	Mean participation score
No answer	55	6.2	1.69
Don't know	259	29.3	2.95
Checked county home economist, county extension council and family living committee	84	9.5	4.82
Checked other than the three listed above	486	55.0	4.25
Total	884	100.0	

checked the lay people and groups as one of the program planning groups had lower participation scores than those who checked the other groups.

Contacts with Non-members

The respondents were asked to indicate whether, during the past month, they had contacted or assisted homemakers who were not club members in the following ways:

1. invited them to club meetings;
2. invited them to other extension events;

3. gave them extension bulletins, folders or leaflets;
4. personally taught ways of doing something they had learned in extension work; and
5. explained about extension work or how to contact and get help from extension agents.

Members who encourage non-members to participate are usually active in the program, know how the program operates, and know the benefits derived from membership and the purposes of the group. As a result, it is expected that homemakers who have contacted or assisted non-members are more likely to have a higher participation score. The null hypothesis is: There is no relationship between participation scores of homemakers and whether or not they contacted non-members. The coefficient of correlation for each type is listed in Table 46.

Table 46. Coefficient of correlation by non-member contacts

Type of activity	Coefficient of correlation	One per cent of level of significance
Invited them to club meetings	+.449	.0868
Invited them to extension meetings	+.5679	.0868
Distributed bulletins	+.5136	.0868
Taught ways of doing things	+.4937	.0868
Explained extension work	+.4536	.0868

The coefficient of correlation for each type of activity exceeds the one per cent level of significance. In all cases, the null hypothesis is rejected. There is a positive significant relationship of participation scores to the contacts with non-members. The homemakers who invite non-members to attend extension meetings, other than their local club meetings, have the highest participation scores (Tables 47-51).

To further test the effect of contact of members with non-members, the participation scores of homemakers who had made five types of contacts were compared with those who made no contact and those who made one to four contacts. The null hypothesis is: There is no difference in the Homemakers' participation scores when compared on the basis of the number

Table 47. Participation of homemakers by whether or not, during the past month, they explained to non-members about extension work or how to contact and get help from extension agents

	Number	Per cent	Mean participation score
Did not explain extension work to non-members	707	80.0	3.41
Did explain extension work to non-members	177	20.0	5.18
Total	884	100.0	

Table 48. Participation of homemakers by whether or not, during the past month, they had invited non-members to club meetings

	Number	Per cent	Mean participation score
Did not invite non-members to club meetings	539	61.0	4.74
Did invite non-members to club meetings	345	39.0	3.14
Total	884	100.0	

Table 49. Participation of homemakers by whether or not, during the past month, they personally taught non-members ways of doing something learned in extension work

	Number	Per cent	Mean participation score
Did not teach non-members something learned in extension	638	72.2	3.25
Did teach non-members something learned in extension	246	27.8	5.09
Total	884	100.0	

Table 50. Participation of homemakers by whether or not, during the past month, they gave non-members extension bulletins, folders, or leaflets

	Number	Per cent	Mean participation score
Did not distribute extension material to non-members	670	75.8	3.29
Did distribute extension material to non-members	214	24.2	5.24
Total	884	100.0	

Table 51. Participation of homemakers by whether or not, during the past month, they invited non-members to other extension meetings

	Number	Per cent	Mean participation score
Did not invite non-members to extension meetings	680	76.9	3.26
Did invite non-members to extension meetings	204	23.1	5.43
Total	884	100.0	

of contacts with non-members. It is expected that those who make all five types of contacts will have a higher participation score than those who do not do all types or who do no contacting of non-members.

The homemakers who contacted non-members all five ways had the highest participation scores (Table 52). This relationship is significant. The F value is 115.93 where significance at the one per cent level is 4.63. The null hypothesis is rejected.

Table 52. Participation of homemakers by whether or not, during the past month, they participated in all, some or none of the methods of contacting non-members

Extent of participation	Number	Per cent	Mean participation score
All five activities	61	6.9	6.46
One to four of the activities	398	45.0	4.31
None of the activities	425	48.1	2.86
Total	884	100.0	

Clothing and Food and Nutrition Problems

To change participants' attitudes, interests, understandings, skills, and abilities has been stated as one of the objectives of an educational program. Homemakers who participate in the extension service, an educational agency, could be expected to be interested in developing a better understanding of their family and its activities, and as a result be expected to be aware of the different methods of homemaking. Two of the important areas stressed by the home economics extension service are food and nutrition and clothing. People with problems in these areas might be expected to participate to a greater degree in extension.

Homemakers were asked to indicate whether they had any problems in these areas. For the purposes of the present study, a comparison was made of the homemakers who indicated that they had problems and those who said they did not have problems in each category. A comparison was also made of those who had problems in both categories and those who did not have problems in either category.

It is expected that the homemakers who have problems in either or both categories will have higher participation scores. The hypothesis in the null form is: There will be no relationship between homemakers' participation scores and whether or not they had problems in clothing and/or food and

nutrition.

Although the tendency appears to be positive between problems and participation scores, this relationship is significant only for clothing problems (Tables 53-55). The

Table 53. Participation of homemakers by whether or not they had clothing problems

	Number	Per cent	Mean participation score
Had no clothing problems	736	83.1	3.02
Had clothing problems	148	16.9	4.34
Total	884	100.0	

Table 54. Participation of homemakers by whether or not they had food and nutrition problems

	Number	Per cent	Mean participation score
Had no food and nutrition problems	628	71.0	3.58
Had food and nutrition problems	256	29.0	4.20
Total	884	100.0	

Table 55. Participation of homemakers by whether or not they had no food and nutrition and clothing problems or had problems in both areas

	Number	Per cent	Mean participation score
No food and nutrition and clothing problems	556	87.3	3.49
Problems in both of the above areas	81	12.7	4.28
Total	637	100.0	

coefficient of correlation for clothing problems is +.3297 where significance at the one per cent level is .0868. The coefficient of correlation for food and nutrition problems is +.1672 which exceeds the one per cent level of significance. The coefficient of correlation for the combined food and nutrition and clothing category is +.1890 which exceeds the one per cent level of significance. The null hypothesis is rejected for clothing problems, food and nutrition problems and the combination of both problems. There is a significant relationship between clothing problems and participation, between food and nutrition problems and participation, and between the combination of food and nutrition and clothing problems and participation.

DISCUSSION

Findings of the present study, in general, supported the propositions made in the Analysis of Data section and the majority of the findings were statistically significant. In addition, the findings of the present study in general substantiated previous extension participation research and other participation research.

Data concerning the participation scores of the women who were working away from home for pay failed to substantiate the suggested hypothesis. In retrospect it might be noted that there was no attempt made to differentiate the type of employment of the homemaker or the amount of time devoted to part-time employment. For example, the homemaker who worked away from home part-time may have been a substitute school teacher or part-time store clerk. It may be interesting to note, although it is not included in the present analysis, that a fairly large number of the homemakers indicated that they had teacher training. In either of the two mentioned examples the part-time working homemaker could still easily attend local club meetings and participate in the extension program.

The suggested proposition regarding participation scores of homemakers who did farm work was not substantiated. It has been pointed out in the previous chapter that the defini-

tion of farm work may have influenced the results.

Additional Needed Research

One of the most serious weaknesses of the present study as well as other participation research is the failure to use true social, social-psychological, and psychological variables. Research that utilizes such variables is urgently needed if social scientists are to be able to predict participation with greater ease and accuracy. Until these variables are more widely used many aspects of participation will not be completely understood.

Data presented in the present study suggests that there are at least two major factors that need additional research. These factors are concerning the working homemaker and the understanding homemakers have about the extension service and its influence upon participation.

Many aspects of the working homemaker and their effects upon participation in the extension service need to be carefully studied. More research information is needed about the type of work homemakers who participate in the extension service are doing and what effects the various types of jobs have on participation. In addition, information is needed about the effect of the amount of time, location of job, and the change in the roles of the women has upon participation.

A more complete measure of the relationship of the understanding of the extension service to participation in the extension service is needed. The factors used in the present study are only at a superficial level. Specific information designed to determine the basic relationships is needed by professional extension workers if they are to expand and improve the program.

Implications for the Home Economics Extension Program

Although the present study of personal, social, and economic characteristics of homemakers in relation to their level of participation is limited in scope, it does provide some insights for further study and the development of the home economics extension program. The ideas presented herein are as a result of the analysis of the present study and interpreted in part out of the extension experiences of this author.

Evident in the analysis of several factors in the present study was the importance of the homemakers knowing about the extension service and understanding their relationship to the program. For example, it was found that homemakers who understood the duties and responsibilities of the county home economist, or knew how the program was planned or contacted non-members to explain the extension service, tended to have

higher participation scores. Causality cannot be established from the evidence in the present study, but the relationship indicated that more people might be reached if the participants in the homemaker study groups more fully understood the extension service.

One method of attacking this problem could come from within the existing extension structure where the home economists are accustomed to presenting lessons to the officers or leaders of the local clubs and groups. At least once a year the home economist could prepare a short supplementary lesson explaining some aspect of the extension service. It might be in the form of an annual report of extension activities to the people of the county, or how the program is planned, or the goals and objectives of the family living committee. This lesson could be as much a part of the program as a lesson on the newest method of preparing vegetables.

Another area that has considerable significance for the extension service is concerned with the clientele of the extension service. Data used in the present analysis showed that all segments of the total population were not represented in this phase of the extension program in the same proportions as they were in the total population. These data may not present complete information as other phases of the extension program may be reaching the homemakers included

in the present study. A study of the homemakers reached through all phases of the program would be needed to indicate whether the home economics extension program is fulfilling its obligation of serving its clientele.

In Iowa, one out of four women are employed outside of the home,[1] while in the present study 11.1 per cent are employed homemakers. Not only were there proportionately fewer working homemakers in the present sample than there were in the total population, but the homemakers who held a full-time job had a significantly lower participation score. Homemakers who were working full time did not have the opportunity to come in contact with the extension service or its representatives through normal channels and at the usual times. A need to include more of these homemakers was indicated by a comparison of the objectives of the extension service to the data in the present study. It appeared that a new operational structure may need to be instigated if the extension service accepts the reponsibility of working with the women employed away from home. Some counties in Iowa and other states have been successful by working through labor unions, employers, specific lessons, and mass media to reach these women.

It appeared that the part-time worker (those working under 35 hours a week) were able to participate in the present

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[1]Iowa State College. Cooperative Extension Service. Challenge to Iowa. Iowa State College. Agr. Ext. Serv. Pamphlet 246-F. 1958.

extension program. The present sample, however, may have been so selective that only the most interested and most active part-time homemakers were included. A more complete study of the part-time and full-time worker is needed to reflect the true situation.

County extension staff members express concern about the competition of other agencies and organizations for the time of the extension service participants. Data in the present study showed that the homemakers who studied home economics in school adult education programs had higher participation scores than those who did not enroll in adult education programs. In addition, the more organizations to which the homemakers belonged, the more active they were in the extension program.

Herein lies another problem or area for study. The most active people in other organizations also participate in the extension service. In the present study a large number of homemakers are not participating in the extension service program. The argument that "I do not have time to participate in extension activities" may then truly reflect other reasons than the reason of being too busy. At least two questions are actually involved. First, is the extension service really meeting the needs of all the homemakers? Secondly, can these homemakers who are not reached by homemaker study groups be

reached more effectively through other methods than organized groups?

Another area of concern for the professional staff member was revealed in the analysis of the homemakers' net income in relation to participation. The homemakers with higher net incomes tended to participate more than those with lower incomes. Logically, it would seem that the homemakers with low net incomes, where allocation of resources is more important, were in more need of the advice and information taught by the home economist than the homemaker with a high income. These low income homemakers appeared not to be using the extension service to the fullest extent. The farm and home development program attempts to reach these families, but this program is small in proportion to its potential.

Analysis of the way homemakers preferred to receive information pointed out that those who preferred the more impersonal media such as radio, television, newspapers, and bulletins had a low participation score. The homemakers who preferred to receive information at meetings had a high participation score. Here again the selectiveness of the sample may have affected this choice. Indications from this analysis showed that if the home economist wanted to reach the homemakers with low participation scores, she would have to utilize all media more efficiently and effectively.

Homemakers with 4-H club experience, either as a leader or member or with children in 4-H, tended to have higher participation scores. All factors except the factor of whether or not the homemaker was a 4-H club member were statistically significant. Even though evidence did not prove that 4-H experience was the cause of higher participation, it did indicate that if extension staff members are interested in reaching an increasingly large number of people more frequently they are apt to be more successful by working through two programs rather than just one. The time spent by the home economist in getting new or additional 4-H club leaders or enrolling new members may have a direct effect upon the adult program as well as the youth program.

It appears that the extension service is reaching a selective segment of its clientele through formal organized groups, but it is not and probably cannot hope to reach all homemakers through such groups. Perhaps the real frontier for the home economics extension program is the homemaker who is not a member of an organized group. Another may be the organizations that are not now participating in the extension service.

SUMMARY

Iowa homemakers have an opportunity to avail themselves of the educational opportunities from Iowa State College through the county extension program. If the program is to be successful not only must the local people be familiar with the county extension service, but it must be familiar with the people in the county. The census and other enumerative data give the home economist the general characteristics of the people with whom she works. Most of the current research studies of homemakers that are participating in the extension program are generally enumerative and have not provided the complete data needed to augment the county extension program. One of the current needs in extension is information about the relationship of characteristics of homemakers to their participation in the extension program.

The present study was designed to determine the relationship of selected personal, social and economic characteristics to the level of participation in an extension program. Another objective was to discuss the implications of these findings in relation to the family living program.

The frame of reference of the present study was developed around the extension service as a social system. The extension service was described as a social system with two inte-

gral sub-systems: the core system and a related system. The core system, relatively clearly defined, is composed of the professional and lay leaders which accept the responsibility for conducting the extension program. The related system which is less clearly defined is made up of the other people who participate in the extension service. The present study was primarily concerned with those people who are a part of the related sub-system.

Factors affecting participation in this related system tend to fall into two frameworks: 1) within the role definition framework and 2) a framework of a social-psychological nature. The factors analyzed in the present study are primarily indicators of both frameworks.

The present study was a partial analysis of the data collected in Iowa for the national study of home demonstration club members. The original sample was drawn under the supervision of the Program Research Branch, Division of Extension Research and Training, of the Federal Extension Service. In addition, to the original seven Iowa counties selected to represent a larger georgraphic area than Iowa, Emmet and Davis counties were added to the sample on an extension supervisory district basis. Davis County data was rejected for this analysis. The original counties were Butler, Carroll, Clinton, Lee, Marshall, Mills, and Worth. A total of 884 complete

and usable schedules were obtained from the 959 homemakers in the sample. Because of the sampling and field procedure the findings from this study cannot be generalized beyond the population from which the original sample was drawn. Even for this group there are certain limitations.

The extension participation scale was developed to include the following items: home economist had visited in the homemaker's home, had talked to the home economist in her office, had sent to the county extension office or Iowa State College for any home economic information, had received any other information sent out by the extension serivce, had heard any radio programs on which extension service representatives spoke, had read any information in newspapers written by extension service representatives, had viewed any television programs put on by the extension service representatives, had attended any meetings other than those already reported in the questionnaire that were sponsored by the extension service or where extension service representatives spoke, had any responsibilities with the extension service other than those already reported in the questionnaire such as extension committee member or leader. One point was given for each activity in which the homemaker had participated.

Factors analyzed in relation to extension participation were place of residence, age, children in the home, education,

employment of the homemaker, income, participation in formal organizations, and methods that homemakers wanted to receive information, contacts with non-members, leadership experience, understanding of the extension service, and identification of problems in family living.

Hypotheses suggested that participation of members would be related to place of residence, age, children in home, education level, home economics training, employment away from home, farm work, source of income, net income, number of years in homemaker study groups, number of formal groups to which homemakers belong, children in 4-H, membership in 4-H, methods preferred to receive information, contact with non-members, leadership in homemakers' group, adult 4-H leadership, understanding of the county home economist's responsibility, understanding of the program planning process, whether or not they perceived themselves as having problems in family living.

All factors except children in the home, amount of farm work, children in the 5-9 year of age category, children in the 15-19 year of age category, newspapers as a source of information and work away from home were significant at the one per cent level. The latter three factors were significant at the five per cent level. Although the other factors were not significant, those homemakers who had children in the home, worked on the farm seasonally and had children in

the 5-9 year old category tended to have higher participation scores.

This study should enable extension workers to better understand the homemakers who participate in the homemakers' study groups and their participation in the extension service. Though some general implications have been pointed out the state staff members and county home economists will need to develop more precise implications for future extension activities. There is a need for similar and more detailed analysis of other segments of the extension clientele as well as those who do not participate to provide a more sound base for future planning.

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APPENDIX

STATISTICAL FORMULAS

Formulas used for statistical analysis in the present study are listed in this section.

Analysis of variance of extension participation scores of homemakers by years in homemaker study groups:

Source of variation	Degrees of freedom	Sum of squares	Mean square
Years	5	559.02	111.80
Within	878	3822.62	4.35
Total	883	4381.62	4.96

Formulas for analysis of variance:[1]

$$\Sigma X^2 - \frac{(\Sigma X)^2}{N} = SS_T$$

$$\frac{(\Sigma X_1)^2}{n} + \frac{(\Sigma X_2)^2}{n} + \cdots \frac{(\Sigma X_n)^2}{n} - \frac{(\Sigma X)^2}{N} = SS_Y$$

$$SS_T - SS_Y = SS_W$$

$$MS_Y = \frac{SS_Y}{d.f.} \qquad MS_W = \frac{SS_W}{d.f.}$$

$$F = \frac{MS_Y}{MS_W}$$

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[1]James E. Wert, Charles O. Neidt, and J. Stanley Ahmann. Statistical methods in educational and psychological research. New York, N. Y. Appleton-Century-Crofts, Inc. 1954. p. 176.

Formulas for biserial correlation:[1]

$$r = \frac{d}{\sigma_t}\left(\frac{pq}{z}\right) \qquad = \sqrt{\frac{\Sigma X^2 - \frac{(\Sigma X)^2}{N}}{N}}$$

$d = \bar{x}_1 - \bar{x}_2$

p = proportion of cases in one category

q = proportion of cases in the other category

z = heights of ordinate dividing the normal curve of unit area into p and q parts

Table values for $\frac{pq}{z}$ were used.

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[1] Ibid., p. 259.